

UTAH GEOLOGICAL SURVEY, ACCOUNTABLE BUDGET REVIEW

NATURAL RESOURCES, AGRICULTURE, & ENVIRONMENTAL QUALITY APPROPRIATIONS SUBCOMMITTEE

ISSUE BRIEF

This brief is intended to assist the members of the Natural Resources, Agriculture, and Environmental Quality Appropriations Subcommittee during the Accountable Budget Process. JR3-2 requires the Legislature to create a budget for a line item or a program by starting from zero and determining whether or to what extent to recommend funding be included in a budget for FY 2021.

The following is a list of questions the subcommittee members could ask when evaluating the programs and making decisions about the division:

1. What are the statutory requirements?

- a. Should the statute/scope of the entity be adjusted?
- b. Does each program have a mission, goals, and objectives that are meaningful and tied to the enabling statute?

2. How well has this "investment" performed in the past? What are the goals for the future?

- a. What value does this division/program add to society?
- b. Are there meaningful performance measures?
- c. How well do they tie to the organization's mission, goals, and objectives?
- d. Are the targets reasonable?
- e. Are the results acceptable?

3. What programs should be funded for FY 2021? How much?

- a. Why is state government providing these services? Could this function be done by a local government or the private sector?
- b. What will happen if the division/program is eliminated or downsized? Who will notice? Who will be affected the most?
- c. Can the taxpayers' investment be reduced by implementing or increasing user fees?
- d. Should the funding mix be adjusted?
- e. Are some of the past building blocks no longer a high priority?
- f. Can some of the expenditures be reduced or eliminated?

The following sections are intended to provide background information about the division's:

- 1. Enabling Authority
- 2. Performance Measures
- 3. Programs and FTEs
- 4. Funding
- 5. Spending

For additional interactive online resources, click on the links below:

- Compendium of Budget Information (COBI),
- Historic Trends of Funding, Expenditures, and FTEs,
- Appropriated vs. Actual Comparison, and
- State of Utah Budget, Data Viz.

Enabling Authority

The governing statute for the Utah Geological Survey is included in <u>UCA 79-3</u>. The division's mission is to provide timely, scientific information about Utah's geologic environment, resources, and hazards.

Performance Measures

The 2019 Legislature included in <u>S.B. 5</u>, <u>Natural Resources</u>, <u>Agriculture</u>, <u>and Environmental Quality Base Budget</u> the following intent language regarding performance measures for the division:

The Legislature intends that the Department of Natural Resources report on the following performance measures for the Utah Geological Survey line item, whose mission is "to provide timely, scientific information about Utah's geologic environment, resources, and hazards:" (1) Total number of individual item views in the UGS GeoData Archive (Target = 300,000), (2) Total number of website user requests/queries to UGS interactive map layers (Target = 7,000,000), (3) Total external revenue collected for the division (Target = \$2,000,000), and (4) The number of workshops held at the Utah Core Research Center (Target = \$15) by October \$31,2020 to the Natural Resources, Agriculture, and Environmental Quality Appropriations Subcommittee.

Below are the measures' targets and results over time.

	FY 2018		FY 2019	FY 2020
	Target	Results	Target	Target
1. Total number of individual item views in the UGS GeoData Archive				300,000
2. Total number of website user requests/queries to UGS interactive map layers				7 million
3. External revenue collected - federal funds and dedicated credits	\$2,000,000	\$1,967,075	\$2,000,000	\$2,000,000
4. Utah Core Research Center workshops held	10	16	10	15
Geologic hazards studies/maps	25	30	25	eliminated
Public inquires answered	4,000	4,502	4,000	eliminated

Programs and FTEs

The following table lists the programs in the division with the FY 2018 actual amounts spent and the FTE count by program. The table also includes an assessment by the division leadership on how critical each program is to the mission of the division. It also identifies if the program is providing administrative support or directly serves the public and lists the statute references. For the mission, goals, objectives, and performance measures of each program, please see the section below the table.

Program Name	How critical to mission?	Type of Program	Mandate Status	Mandate Citation	State Funds	Federal Funds	Other Funds	Total Funds	FTE
UGS BOARD	4-Tangential	Admin. Support	State Statute Mandated	79-3-301	\$5,383			\$5,383	
PALEONTOLOGY	1-Fundamental	Direct Public Program	State Statute Mandated	79-3-202; 79-3-Part 5	\$278,759	\$18,240	\$15,930	\$312,929	3
ADMINISTRATION	1-Fundamental	Admin. Support	State Statute Mandated	79-3-202	\$613,559	\$5,173	\$128,641	\$747,373	5
GEOLOGIC INFORMATION & OUTREACH (GIO)	1-Fundamental	Direct Public Program	State Statute Mandated	79-3-202	\$189,617	\$2,573	\$157,967	\$350,157	3
GIO - BOOKSTORE	1-Fundamental	Direct Public Program	State Statute Mandated	79-3-202	\$17,982		\$182,906	\$200,888	2
GIO- EDITORIAL	1-Fundamental	Direct Public Program	State Statute Mandated	79-3-202	\$321,382		\$75,349	\$396,731	5
GIO -TECHINCAL REVIEW	1-Fundamental	Direct Public Program	State Statute Mandated	79-3-202	\$67,441			\$67,441	1
GIO - WEB SERVICES	1-Fundamental	Direct Public Program	State Statute Mandated	79-3-202	\$692,712	\$445	\$7,210	\$700,367	4
GEOLOGIC MAPPING	1-Fundamental	Direct Public Program	State Statute Mandated	79-3-202	\$612,721	\$142,787	\$223,221	\$978,729	8
GEOLOGIC HAZARDS	1-Fundamental	Direct Public Program	State Statute Mandated	79-3-202	\$816,584	\$173,970	\$159,150	\$1,149,704	11
GROUNDWATER	1-Fundamental	Direct Public Program	State Statute Mandated	79-3-202	\$285,430	\$320,072	\$667,386	\$1,272,888	13
ENERGY & MINERALS	1-Fundamental	Direct Public Program	State Statute Mandated	79-3-202	\$266,930	\$80,747	\$1,068,155	\$1,415,832	13
Total					\$4,168,500	\$744,006	\$2,685,915	\$7,598,422	68

Programs' Mission, Goals, Objectives, and Performance Measures

UGS Board

Mission: Provide oversight and guidance to the Utah Geological Survey.

Goals: Establish and review policies, programs and priorities; review and recommend budgets; assess the needs of the community with regard to development and use of geological resources; and keep the director advised concerning survey policies.

Objectives: none identified.

Performance Measures: none identified.

Ties to Statute: 79-3-301

Paleontology

Mission: Helps identify, protect, and preserve Utah's fossil resources through public outreach programs and through inventory and recovery projects that reconcile preservation and developmental needs.

Goals: Evaluate applicants and issue permits for excavations and/or disturbances of state lands. Monitor important sites for vandalism and misuse and take appropriate action. Help educate the public about Utah's fossil resources. Identify and preserve fossils that are endangered. Conduct studies of Utah's fossil resources. Monitor and collaborate with researchers working in Utah.

Objectives: Proactively work to protect and preserve for future generations Utah's unique fossil resources. Process in a timely manner all applications for permits to disturb state lands and to conduct paleontologic research and excavations on state lands. Stay current on laws at all levels that impact fossil resources. Compile and maintain lists of important fossil sites in the state (list is not for public use to protect sites). Take positive actions to coordinate and cooperate with BLM, Park Service, Forest Service, Military, Tribes, private landowners, and other holders of land to help preserve and protect important fossil resources. Assist and educate community museums and educational institutions to help them curate and display fossils properly. Salvage and properly curate fossil resources that have been or are in danger of vandalism or theft.

Performance Measures: none identified.

Ties to Statute:

- Stimulate research, study, and activities in the field of paleontology (Title 79-3-202 [l]).
- Mark, protect, and preserve critical paleontological sites (Title 79-3-202 [m]).
- Collect, preserve, and administer critical paleontological specimens until the specimens are placed in a repository or curation facility (Title 79-3-202 [n]).
- Administer critical paleontological site excavation records (Title 79-3-202 [o]).
- Edit and publish critical paleontological records and reports (Title 79-3-202 [p]).
- Also, Title 79-3-202 (a), (b), (g), (i), (j), (k) and 79-3-Part 5

Administration

Mission: The overall mission of the Utah Geological Survey is to provide timely scientific information about Utah's geologic environment, resources, and hazards.

Goals: The UGS Administration provides management, administrative, and accounting support to the UGS staff and board. The Director, as the State Geologist, provides geologic information to DNR, other state and local government agencies, state educational institutions, industry, and the general public.

Objectives: Empower individual program managers with the tools, personnel and funds to propose and complete projects relevant to the State of Utah's geologic needs.

Performance Measures: none identified.

Ties to Statute: Provides the support necessary for all the staff and programs under the Survey to accomplish the powers and duties outlined in 79-3-202.

Geological Information and Outreach (GIO)

Mission: The Geologic Information and Outreach (GIO) Program makes Utah Geological Survey (UGS) information easily accessible and available to a broad audience through a wide variety of mediums.

Goals: Provide timely and accurate information on Utah's geology and related topics. Serve a broad audience, including researchers, industry, government officials/decision makers, educators and students, and the general public. Provide clear and objective information for informed decision-making. Provide easy access to UGS information. Maximize use and effectiveness of UGS information by making that information available through a wide variety of mediums. Provide effective and engaging teacher resources. Increase public awareness of geologic and related information, and appreciation for how that information can make a difference in the lives of Utah's citizens.

Objectives: Answer public inquiries; perform public, teacher, and media outreach; prepare translated publications for a non-technical audience; manage the UGS Library.

Performance Measures: none identified.

Ties to Statute:

- Assist and advise state and local agencies and state educational institutions on geologic, paleontologic, and mineralogic subjects (Title 79-3-202 [a]).
- Collect and distribute reliable information regarding the mineral industry and mineral resources, topography, paleontology, and geology of the state (Title 79-3-202 [b]).
- Cooperate with state agencies, political subdivisions of the state, quasi-governmental agencies, federal agencies, schools of higher education, and others in fields of mutual concern, which may include field investigations and preparation, publication, and distribution of reports and maps (Title 79-3-202 [g]).
- Prepare, publish, distribute, and sell maps, reports, and bulletins, embodying the work accomplished by the survey, directly or in collaboration with others, and collect and prepare exhibits of the geological and mineral resources of this state and interpret their significance (Title 79-3-202 [j]).
- Collect, maintain, and preserve data and information in order to accomplish the purposes of this section and act as a repository for information concerning the geology of this state (Title 79-3-202 [k]).
- Edit and publish critical paleontological records and reports (Title 79-3-202 [pl).

GIO - Bookstore

Mission: same as Geological Information and Outreach

Goals: same as Geological Information and Outreach

Objectives: Offer a broad selection of publications and maps on Utah geology and other natural resource topics; maintain inventory of USGS topographic maps for the entire state of Utah; provide information and assistance regarding Utah geology and natural history.

- 5 -

Performance Measures: none identified.

Ties to Statute: same as Geological Information and Outreach

UTAH GEOLOGICAL SURVEY, ACCOUNTABLE BUDGET REVIEW

GIO - Editorial

Mission: same as Geological Information and Outreach

Goals: same as Geological Information and Outreach

Objectives: Provide graphic arts support, design, and layout for all UGS publications; GIS and cartographic support for UGS maps; web page design for UGS website; coordinate content for UGS social media platforms; provide publication services for other DNR divisions and state agencies.

Performance Measures: none identified.

Ties to Statute: same as Geological Information and Outreach

GIO - Technical Review

Mission: same as Geological Information and Outreach

Goals: same as Geological Information and Outreach

Objectives: Coordinate process of peer, administrative, and editorial review to ensure that UGS publications meet high scientific and editorial standards.

Performance Measures: none identified.

Ties to Statute: same as Geological Information and Outreach

GIO - Web Services

Mission: same as Geological Information and Outreach

Goals: same as Geological Information and Outreach

Objectives: Coordinate and implement online delivery of all UGS products; manage content of the UGS website; develop and maintain interactive maps and databases.

Performance Measures: Total number of website user requests/queries to UGS interactive map layers; FY19 Target 7,000,000.

Ties to Statute: same as Geological Information and Outreach.

Geologic Mapping

Mission: The UGS Geologic Mapping Program maps the geology of the state at various scales to provide an accurate foundation for nearly all other types of geologic studies, land-use and geologic hazard studies, and resource evaluations.

Goals: Complete intermediate-detail 30' x 60' quadrangles (1:62,500-1:100,000 scale) geologic maps and GIS databases of the entire state. Complete detailed 7.5' quadrangles (1:24,000-scale) geologic maps and GIS databases of the entire state, prioritizing about 300 quadrangles that cover cities, towns, urban growth areas, geologic hazard areas, and key resource areas (out of 1512 that cover state). Increase accuracy of older maps by improving spatial accuracy of map features utilizing digital technology, stratigraphic unit descriptions, nomenclature, isotopic ages, and correlations.

Objectives: Mapping priorities are established by a committee of non-UGS geologic-map users who represent federal and state land and resource management agencies, universities, school trust lands, industry, and other geologic organizations. Complete geologic map of one 30' x 60' quadrangle per year; have four to six multi-year mapping projects in progress at all times (current status: 36 of 46 maps complete to level 5 of 10; 32 GIS released). Complete

UTAH GEOLOGICAL SURVEY, ACCOUNTABLE BUDGET REVIEW

five to eight 7.5' quadrangles per year; have ten to fifteen projects in progress (current status: 200 complete to level 8 of 10; 200 to level 5; 300 to level 2; 800 no map). Monitor geologic research, contribute to geologic research when it improves map quality. Complete and post to UGS website GIs data of at least five geologic maps per year.

Performance Measures: Total number of individual requests or views of Interactive Maps on UGS website; FY19 target 5,000,000. Maintain status maps that track progress of projects and quality of geologic maps.

Ties to Statute:

- Assist and advise state and local agencies and state educational institutions on geologic, paleontologic, and mineralogic subjects (Title 79-3-202 [a]).
- Collect and distribute reliable information regarding the mineral industry and mineral resources, topography, paleontology, and geology of the state (Title 79-3-202 [b]).
- Assist local and state agencies in their planning, zoning, and building regulation functions (Title 79-3-202 [f]).
- Cooperate with state agencies, political subdivisions of the state, quasi-governmental agencies, federal agencies, schools of higher education, and others in fields of mutual concern, which may include field investigations and preparation, publication, and distribution of reports and maps (Title 79-3-202 [g]).
- Study and analyze other scientific, economic, or aesthetic problems as, in the judgment of the board, should be undertaken by the survey to serve the needs of the state and to support the
- development of natural resources and utilization of lands within the state (Title 79-3-202 [i]).
- Prepare, publish, distribute, and sell maps, reports, and bulletins, embodying the work accomplished by the survey, directly or in collaboration with others, and collect and prepare exhibits of the geological and mineral resources of this state and interpret their significance (Title 79-3-202 [j]).
- Collect, maintain, and preserve data and information in order to accomplish the purposes of this section and act as a repository for information concerning the geology of this state (Title 79-3-202 [k]).

Geologic Hazards

Mission: The Geologic Hazards Program is focused on reducing Utah's life safety, property, and economic risk from geologic hazards.

Goals: Reduce Utah's life safety, injury, property, and economic risk from geologic hazards by providing products and services to support effective and informed decision making.

Objectives: Respond to all requests for geologic emergency response and assistance with geologic hazards by local governments and the Utah Division of Emergency Management. Create effective geologic hazard maps either in comprehensive map sets or individually for special projects. Respond to all public inquiries about geologic hazards and provide educational opportunities to technical and non-technical audiences as needed. Characterize significant landslide and earthquake risks, completing detailed comprehensive hazard maps for major urban areas, assisting state and local government agencies responsibly address hazards, and promoting hazard reduction through education.

Performance Measures: Total number of individual item views in the UGS Geodata Archive; FY19 Target 300,000.

Ties to Statute:

- Responding to geologic hazard emergencies and provide unbiased, scientific advice to local governments and incident commanders (Title 79-3-202[a], [e], [g], Title 53-2a, and Title 63C-6-104),
- Investigating and mapping geologic hazards in urban and other areas and publish and distribute as PDFs and GIS spatial data (Title 79-3-202[b], [c], [e], [f], [g], [h], [j], [k], and Title 63C-6-104), and
- Providing geologic hazard related technical and educational outreach and information to inform Utah about geologic hazards (Title 79-3-202[f], [g], [j], [k], and Title 63C-6-104).

UTAH GEOLOGICAL SURVEY, ACCOUNTABLE BUDGET REVIEW

Groundwater

Mission: The Groundwater Program studies environmental change to aid resource management, evaluates the quantity and quality of Utah's groundwater resources, and maintains the Utah Wetland Information Center (UWIC) which provides a broad spectrum of wetland-related resources from spatial data to outreach and educational materials.

Goals: Provide technical assistance to state and local governments on groundwater-related issues, and identify and fulfill groundwater-information needs. Maintain the Groundwater Monitoring Data Portal, which stores and distributes large quantities of monitoring data acquired through the West Desert Groundwater Monitoring-Well Project (including Snake Valley) and other projects. Contribute groundwater quality and groundwater level data to the National Ground-Water Monitoring Network (NGWMN), a compilation of selected wells that monitor groundwater aquifers all over the United States, which provides users with current and reliable information for the planning, management, and development of groundwater resources.

Objectives:

- Interactive Map of Groundwater Wells and Springs in Utah.
- Utah Well & Spring Database. Recharge- and Discharge-Area Maps. Sensitivity & Vulnerability to Pesticides Maps.
- Groundwater Quality Publications. Wastewater Disposal System Publications. Aquifer Storage and Recovery.

Performance Measures: none identified.

Ties to Statute:

- Assist and advise state and local agencies and state educational institutions on geologic, paleontologic, and mineralogic subjects (Title 79-3-202 [a]).
- Survey the geology of the state, including mineral occurrences and the ores of metals, energy resources, industrial minerals and rocks, mineral-bearing waters, and surface and ground water resources (Title 79-3-202 [c]).
- Assist local and state agencies in their planning, zoning, and building regulation functions (Title 79-3-202 [f]).
- Cooperate with state agencies, political subdivisions of the state, quasi-governmental agencies, federal
 agencies, schools of higher education, and others in fields of mutual concern, which may include field
 investigations and preparation, publication, and distribution of reports and maps (Title 79-3-202 [g]).
- Study and analyze other scientific, economic, or aesthetic problems as, in the judgment of the board, should be undertaken by the survey to serve the needs of the state and to support the
- development of natural resources and utilization of lands within the state (Title 79-3-202 [i]).
- Collect, maintain, and preserve data and information in order to accomplish the purposes of this section and act as a repository for information concerning the geology of this state (Title 79-3-202 [k]).

Energy & Minerals

Mission: The Energy & Minerals Program provides research and data on Utah's energy and mineral resources to facilitate responsible development.

Goals: Through various research projects, provide the data that industry, the general public, and other governmental agencies need to make informed decisions about managing and developing energy and mineral resources in Utah. Also, manage and promote the Utah Core Research Center, a repository of well core and cuttings from across the state; a collection that represents several billion dollars worth of investment.

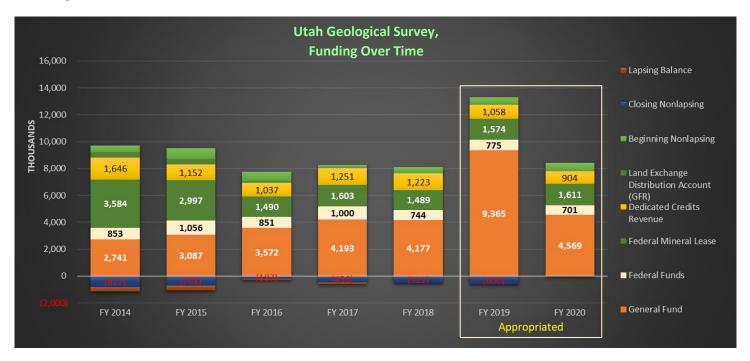
Objectives: Generate resource assessments for Utah's energy and mineral deposits and provide land evaluation advice. Collect, archive, and distribute current and historic energy and mineral data, including actively seeking out core and cuttings material to archive at the Utah Core Research Center. Respond to public inquiries about energy and mineral resources and provide educational opportunities to technical and non-technical audiences. Conduct original research to better understand energy and mineral resources.

Performance Measures: The number of workshops held at the Utah Core Research Center in a given fiscal year; FY19 Target 15.

Ties to Statute:

- Survey the geology of the state, including mineral occurrences and the ores of metals, energy resources, industrial minerals and rocks, mineral-bearing waters, and surface and ground water resources, with special reference to their economic contents, values, uses, kind, and availability in order to facilitate their economic use (Title 79-3-202 [c])
- Investigate the kind, amount, and availability of mineral substances contained in lands owned and controlled by the state, to contribute to the most effective and beneficial administration of these lands for the state (Title 79-3-202 [d])
- Collect and preserve data pertaining to mineral resource exploration and development programs and construction activities, such as claim maps, location of drill holes, location of surface and underground workings, geologic plans and sections, drill logs, and assay and sample maps, including the maintenance of a sample library of cores and cuttings (Title 79-3-202 [h])
- Also, Title 79-3-202 (a), (b), (g), (i), (j), (k), (q).

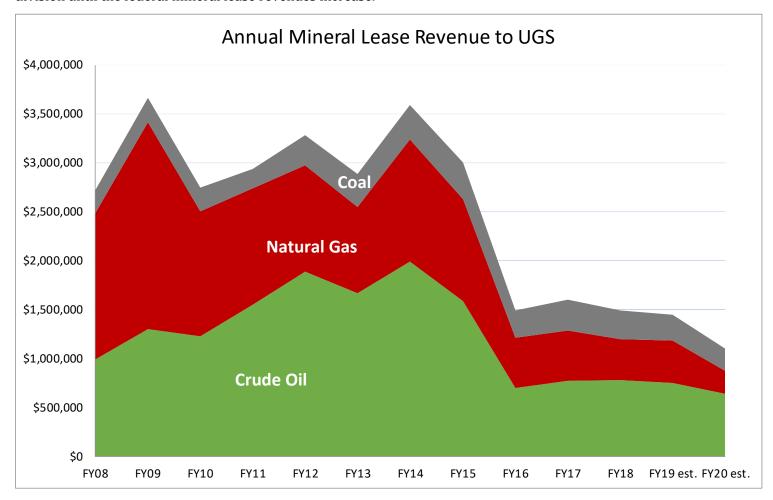
Funding



The Federal Mineral Lease funds appropriated for FY 2019 were \$1.6 million but the division is estimating that the actual amount will be \$1.45 million. And similarly, the FY 2020 appropriation from this funding source is \$1.6 million but the updated estimated amount is \$1.1 million.

The increase in FY 2019 from the General Fund is due to a \$5 million pass-through appropriation for the Bonneville Salt Flats restoration, which is contingent upon \$45 million contribution from the federal government.

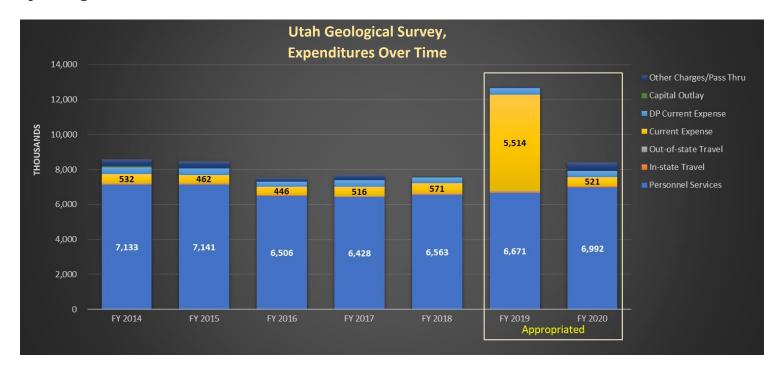
The Federal Mineral Lease is the division's largest non-state fund. The statute (<u>UCA 59-21-1, 2</u>) allocates 2.25% of the state's share of federal mineral lease royalties to the survey. These receipts are a crucial part of the division's revenue, and in recent years have ranged between 20% and 40% of the total budget, depending on current energy prices. These revenues decreased in FY 2015 and FY 2016 due to the lower commodities prices, which led to lower production. The Legislature provided one-time and ongoing appropriations from the General Fund to assist the division until the federal mineral lease revenues increase.



Major Funded Items Over Time

Item Name	Fund	FY 2014	FY 2015	FY 2016	FY	FY 2018	FY	FY 2020
					2017		2019	
Bonneville Salt Flats Restoration Project	General 1x						5,000,000	
Federal Grants	Federal		119,500		252,000	183,400		
Geologic Data Coordinator	General Fund							100,000
Geologic Hazard Mapping	General Fund			184,800				
Geologic Hazard Mapping	General 1x			3,000				
Land Exchange Distribution Restricted Acct	Restricted					25,000		
Land Exchange Distribution Restricted Acct	Restricted 1x				25,000			
Mineral Lease Adjustments	Federal	58,500	93,600					
No Travel Increase from FY 2016 Level	General 1x					(83,300)		
Snake Valley Water Monitoring	General Fund		106,000					
UGS Increase Contract Revenue	Ded. Credits 1x						481,400	314,700
Utah Geological Survey Revenue Shortfall	General Fund				1,000,000			
Utah Geological Survey Revenue Shortfall	General 1x		300,000	500,000				

Spending



The following table shows the budgeted and actual FTEs (full-time equivalents) in the division over time:

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
	Actual	Actual	Actual	Actual	Actual	Appr.	Appr.
Actual FTE	81	77	68	68	68	n/a	n/a
Budgeted FTE	76	81	83	67	61	66	67

The figure below lists the top vendors in FY 2018:

Vendor Name	Amount	%
CAMPBELL SCIENTIFIC INC	44,280	11.44%
RB&G ENGINEERING INC	27,445	7.09%
ARTISTIC PRINTING COMPANY	13,687	3.54%
INTERMOUNTAIN ENVIRONMENTAL INC	13,258	3.43%
SelfServiceCopiers	11,733	3.03%
LAB SAFETY SUPPLY INC	11,665	3.01%
SOLINST CANADA LTD	10,843	2.80%
ROCKY MOUNTAIN POWER & LIGHT PORTLAND	9,049	2.34%
OFFICE DEPOT BSD INC	7,871	2.03%
StateMail	7,797	2.01%
NATIONAL GEOGRAPHIC HOLDINGS	7,782	2.01%
VERIZON WIRELESS	7,688	1.99%
SKYLINE CONTRACTORS	6,435	1.66%
AMERICAN WEST ANALYTICAL LABS	6,259	1.62%
UNIVERSITY OF UTAH	5,489	1.42%
SUNRISE PRESS LLC	4,941	1.28%